

Building The ***Digital Future*** *Accelerating Convergence*

Patrick P. Gelsinger
Senior Vice President & CTO

February 21, 2003



Our Technology Trajectory: ***Moore's Law***



Performance



Our Technology Trajectory: **Moore's Law**



Performance



***Extending and Expanding
Moore's Law***

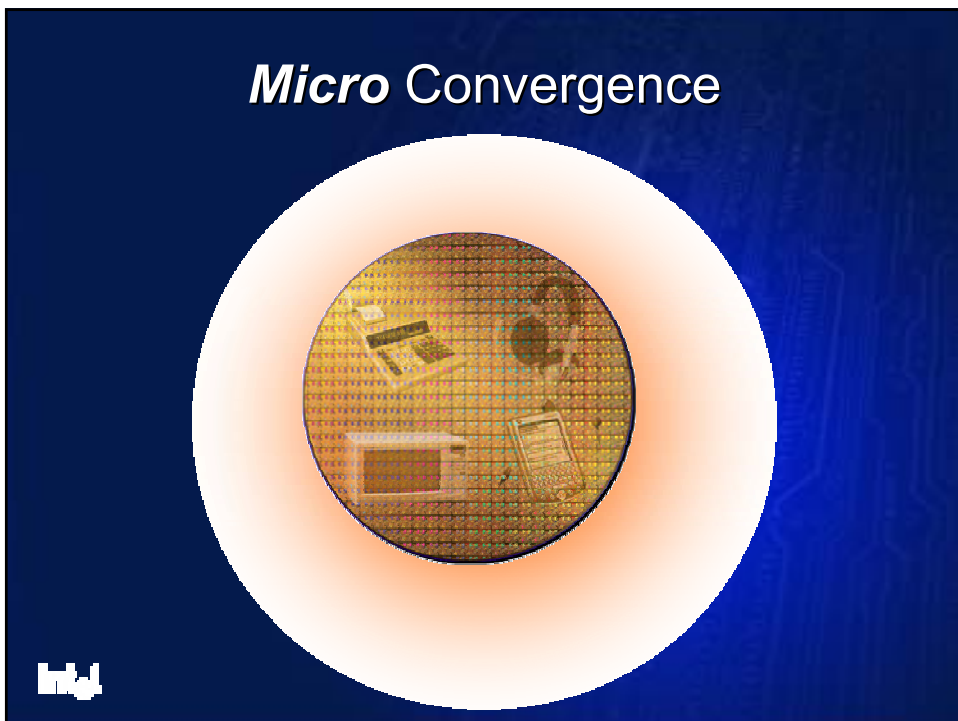
A black and white portrait of a man with short, light-colored hair, wearing a dark shirt, resting his chin on his hand. The background is a blue-tinted image of a modern building.

Metcalfe's Law

the usefulness, or utility, of a network equals the square of the number of nodes

A small logo in the bottom left corner, consisting of a stylized 'T' and 'C' inside a white oval.

Telecon



Micro Convergence



Micro Convergence



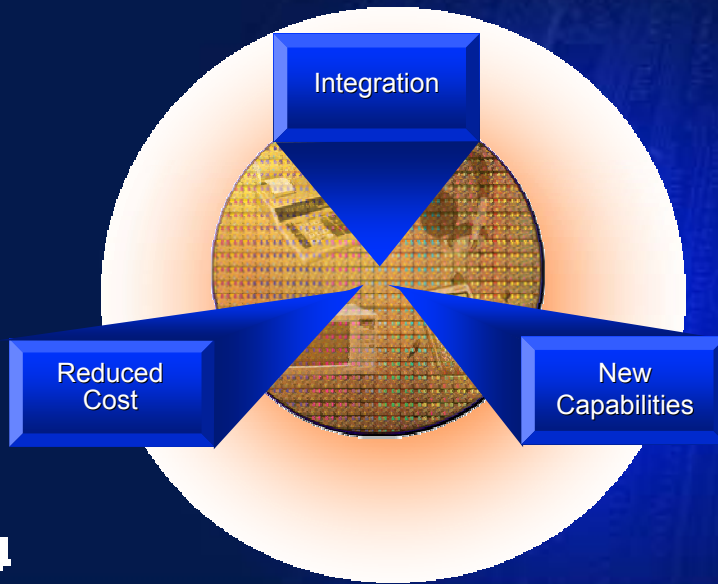
Micro Convergence



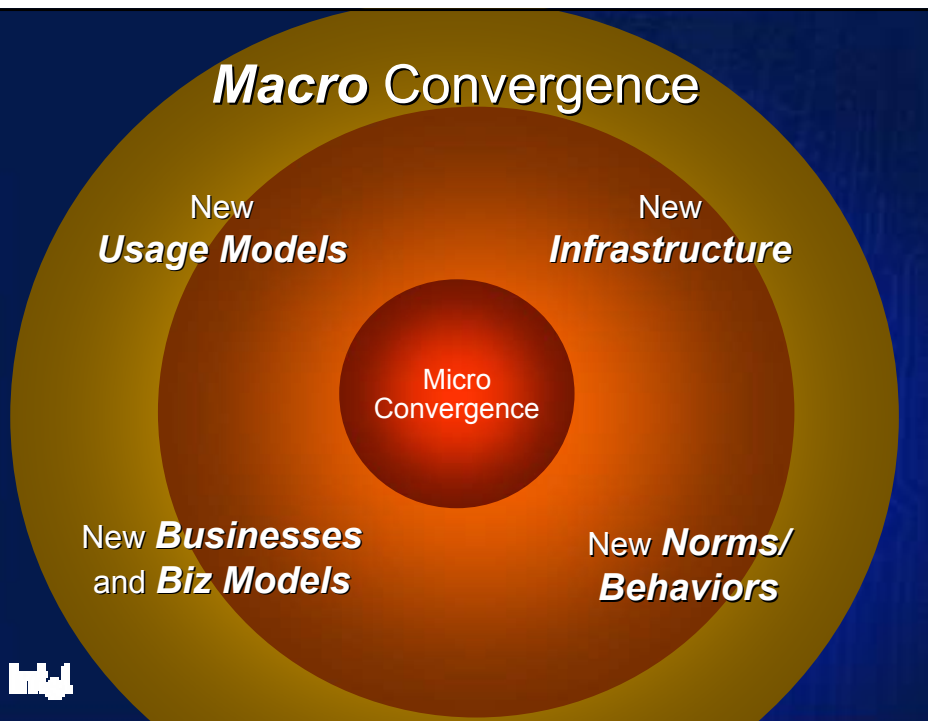
Micro Convergence



Micro Convergence



Macro Convergence



A Convergence Example

Micro Convergence



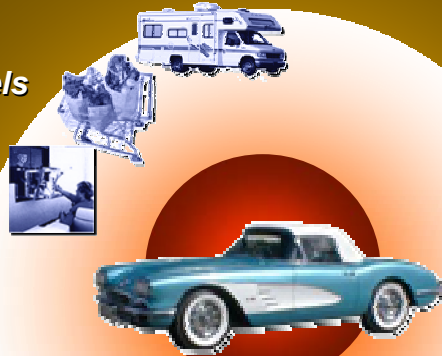
Macro Convergence

Micro Convergence



Macro Convergence

New
Usage Models



Macro Convergence

New
Usage Models

New
Infrastructure

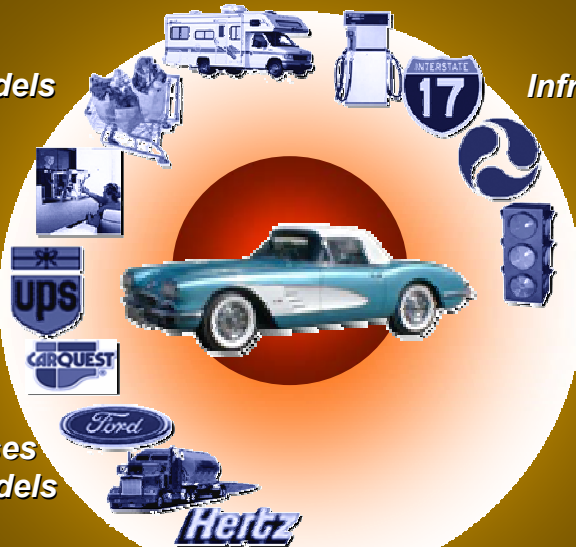


Macro Convergence

New
Usage Models

New
Infrastructure

New
Businesses
and *Biz Models*

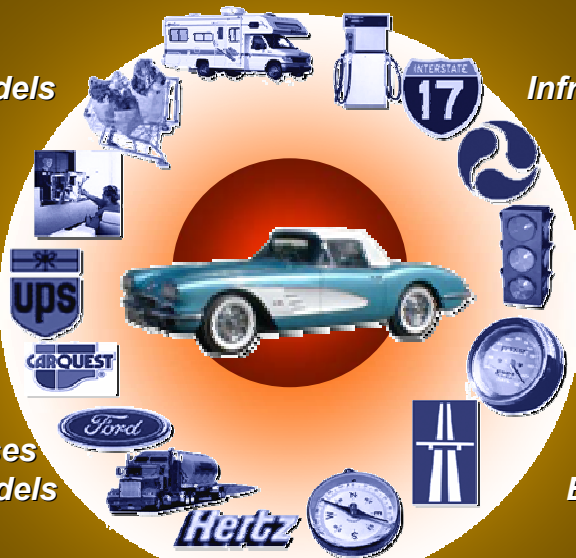


Macro Convergence

New
Usage Models

New
Infrastructure

New
Businesses
and *Biz Models*

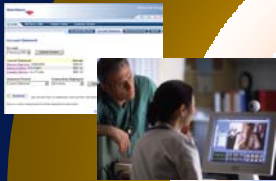


Dawn of Our Macro Convergence



Dawn of Our Macro Convergence

New
Usage Models



amazon.com

ebay
The World's Online Marketplace™

New
Businesses
and **Biz Models**



New
Infrastructure



New
Norms/
Behaviors

*Other brands and names may be claimed as the property of others.

Our Next Era:

Macro Convergence



back
to the
future



CONVERGENCE:

Transforming Manufacturing

UPW8880Y	853899746
KHDEAIPW	54363933
PKDNH8KE	65180175
LHADDCAK	12964369
8DWEKU85	47070645
LDYDH8KH	64039280
CL888F8T	73191173

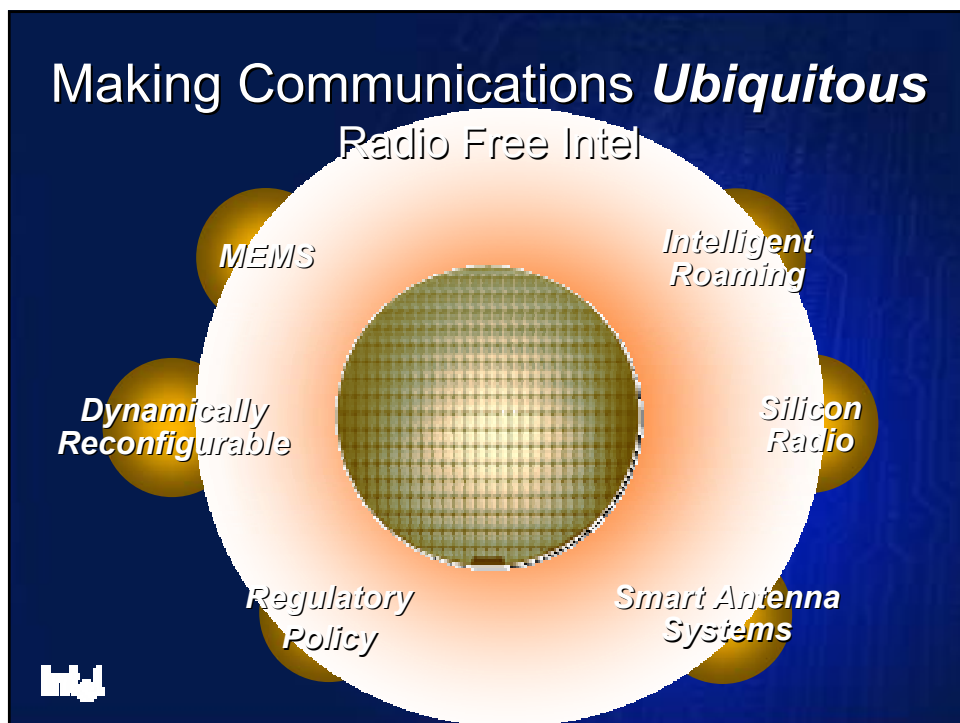
February 21, 2015

Intel Fab 52, Chengdu, PRC

450mm 11 nanometers

Chengdu

DEMO

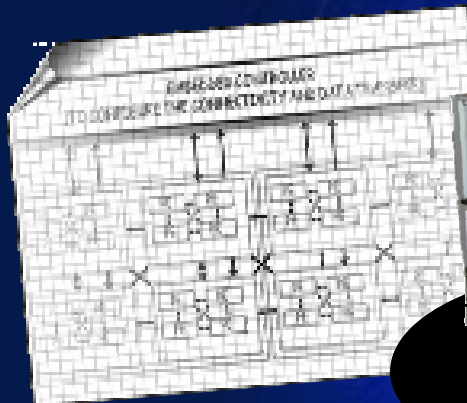


Driving
Next Generation
Wireless Communication



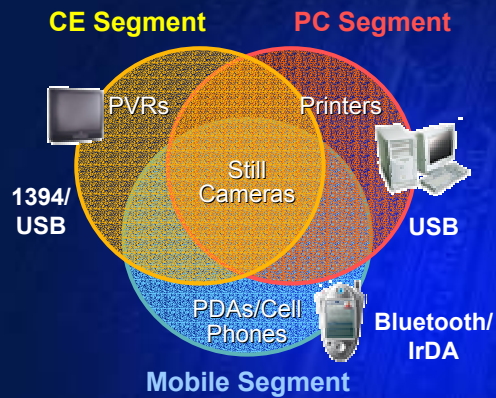
DEMO

Driving
Next Generation
Wireless Communication

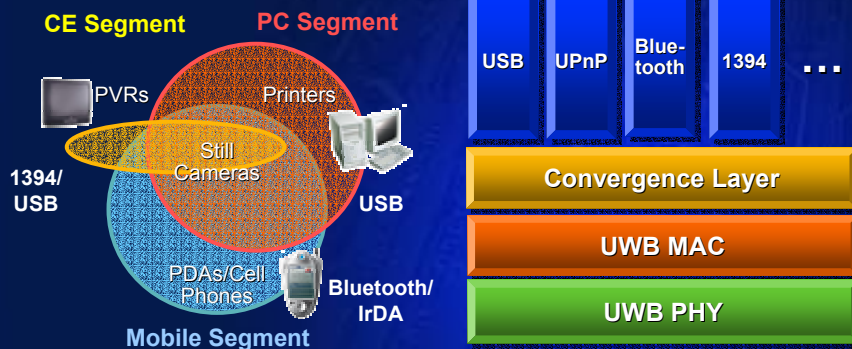


DEMO

Making *Ultra-wideband* Real



Making *Ultra-wideband* Real



Common UWB Radio Platform for
Wireless Personal Area Networks



Building The Communications Infrastructure

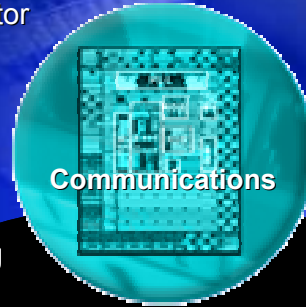
TCP Offload Engine

10 GHz TCP Offload Accelerator

90nm Dual-Vt CMOS

10GbE Wirespeed Processing

Dynamic Packet Re-ordering

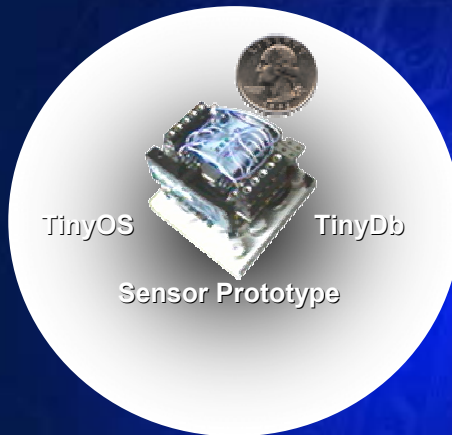


Making ***Distributed Intelligence*** Happen

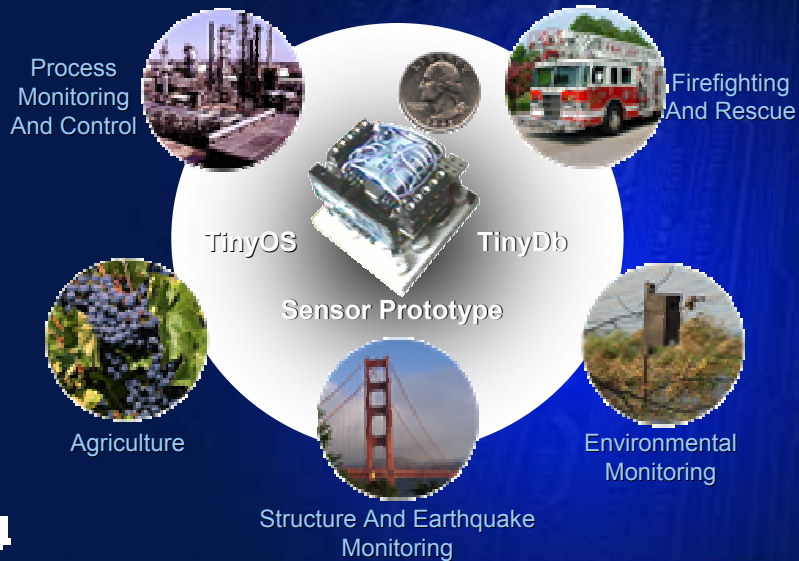
TinyOS

TinyDb

Sensor Prototype



Making *Distributed Intelligence* Happen

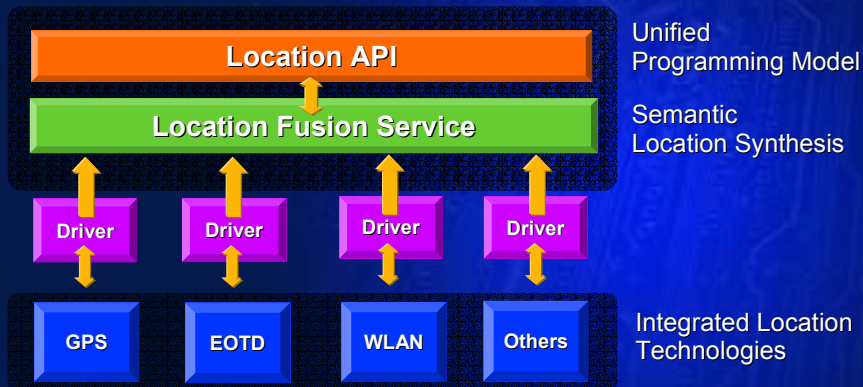


Enabling Applications with *Context*

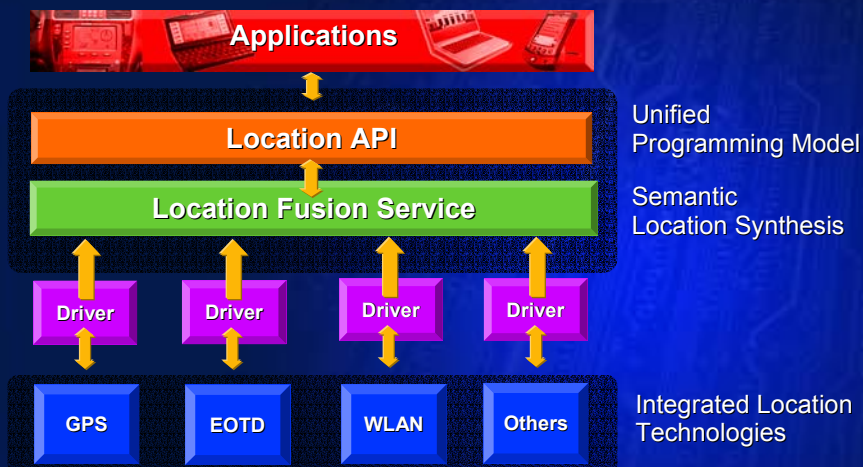


Integrated Location
Technologies

Enabling Applications with *Context*



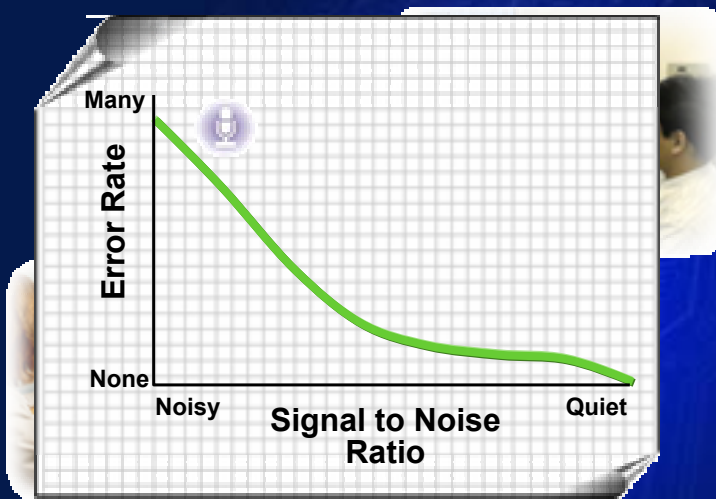
Enabling Applications with *Context*



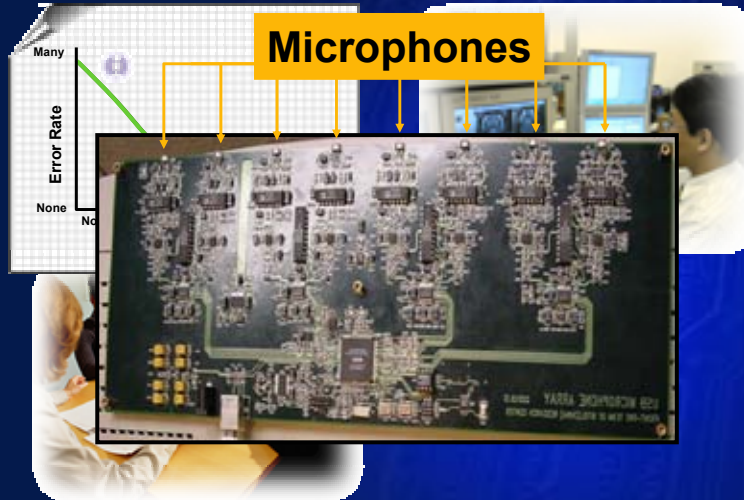
Driving *Natural Interactions*



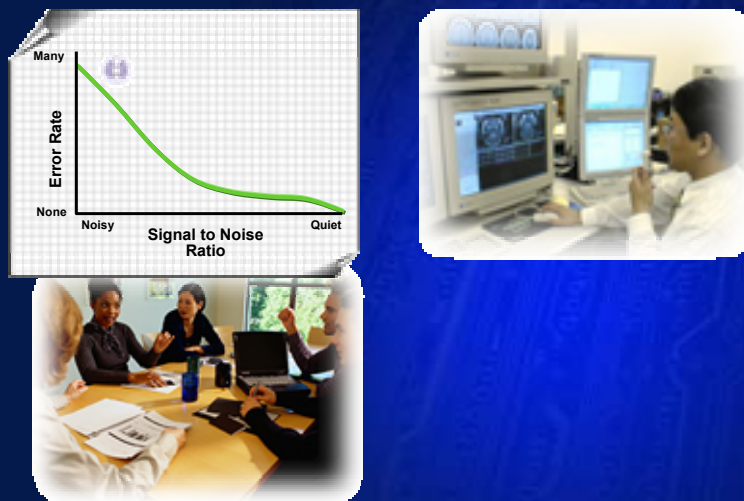
Driving *Natural Interactions*



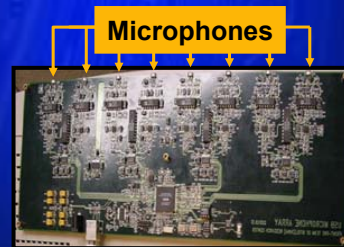
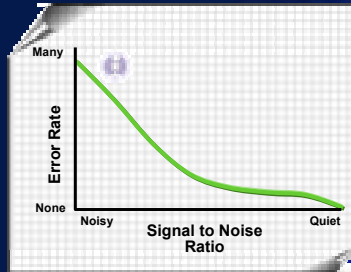
Driving *Natural Interactions*



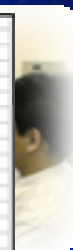
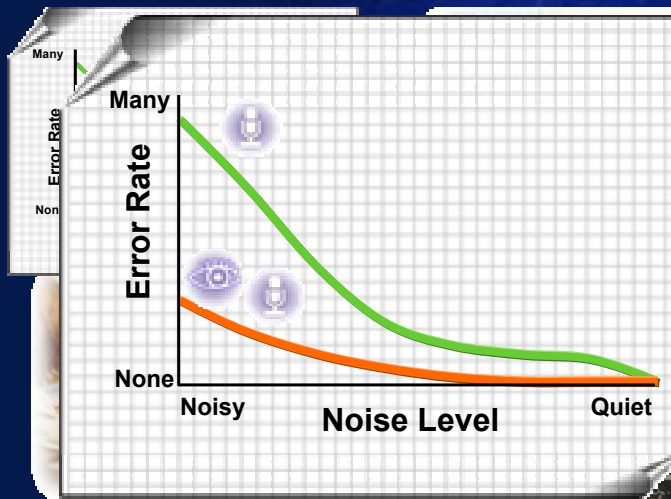
Driving *Natural Interactions*



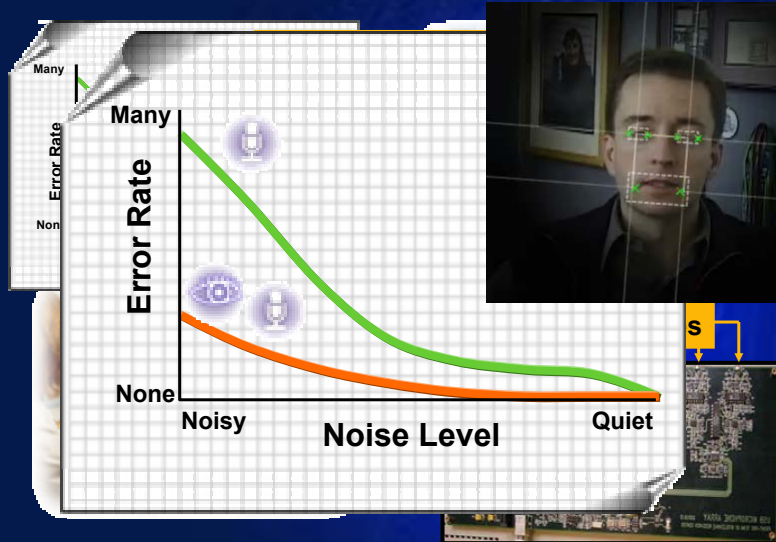
Driving *Natural Interactions*



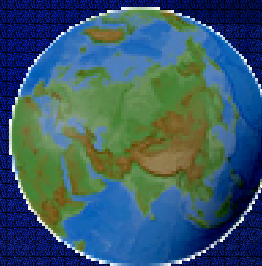
Driving *Natural Interactions*



Driving *Natural Interactions*



CONVERGENCE:
Expanding Uses/Users



Eric Dishman

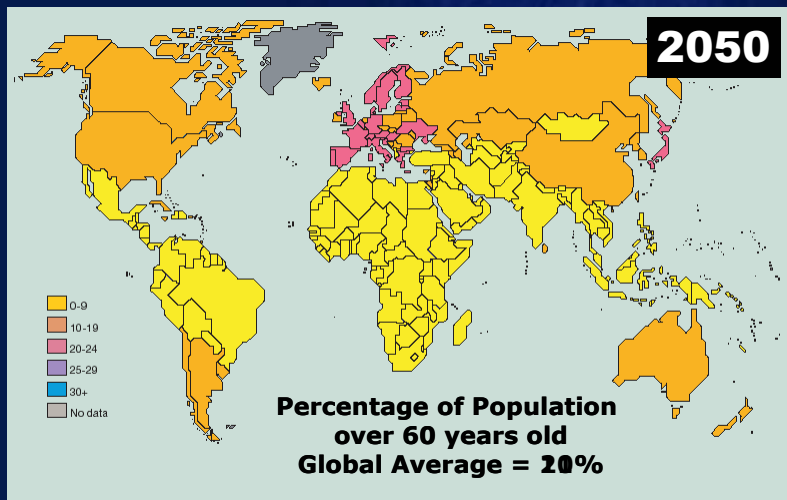
Director
Proactive Health Research
Intel Research

"...for the rest of human history, there are going to be more old people than young..."

Dr. Joel Cohen
Professor of Populations
Rockefeller and Columbia Universities

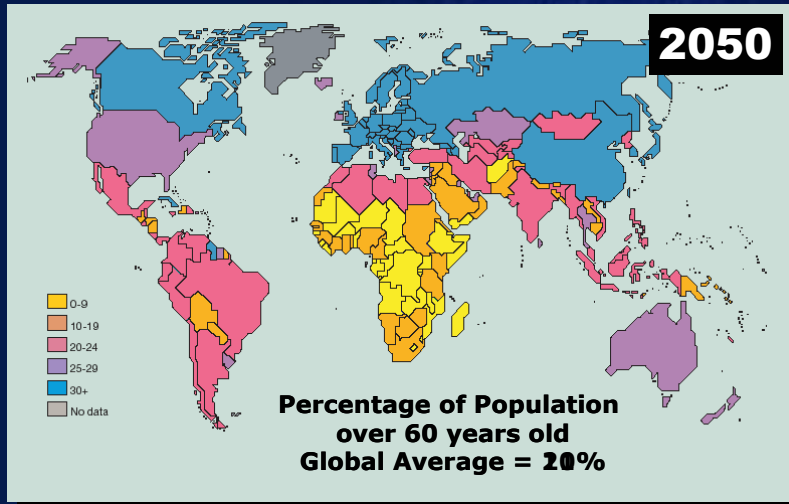


Global Population Shift



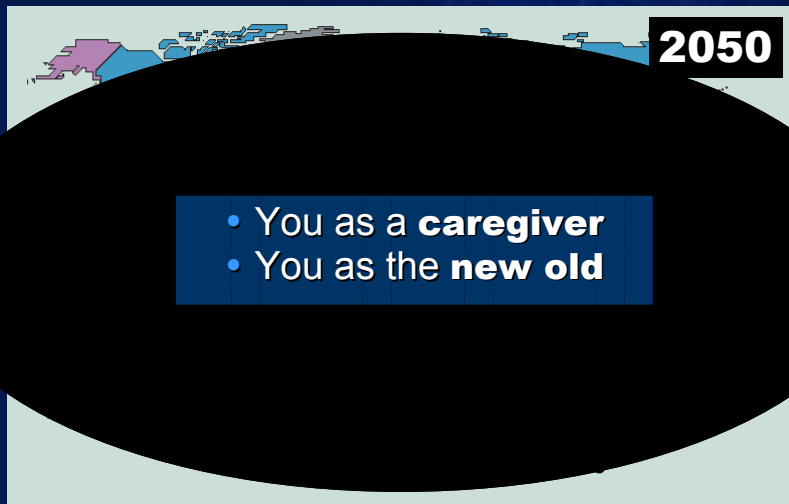
SOURCE: United Nations • "Population Aging • 2002"

Global Population Shift



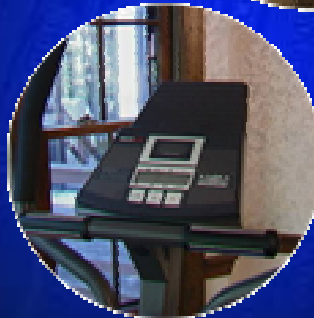
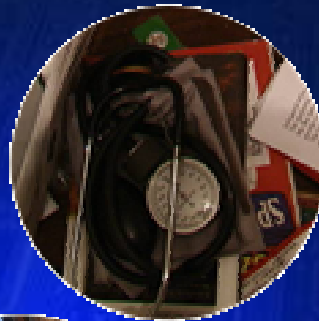
SOURCE: United Nations • "Population Aging • 2002"

Global Population Shift



SOURCE: United Nations • "Population Aging • 2002"

New *Users/Usages*



Building the Future **Collaboration**

- Industry
 - Technology, Healthcare, Eldercare Companies



Building the Future

Collaboration

- Industry
 - Technology, Healthcare, Eldercare Companies



- Academic Research



Building the Future

Collaboration

- Industry
 - Technology, Healthcare, Eldercare Companies



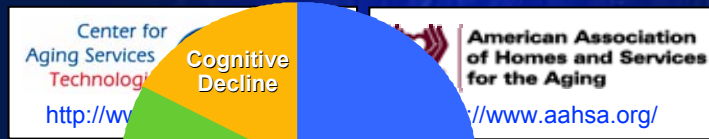
- Academic Research
- Agencies & Associations



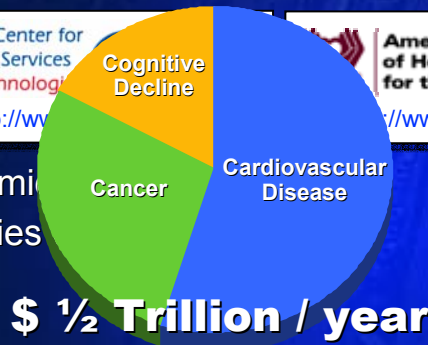
Building the Future

Collaboration

- Industry
 - Technology, Healthcare, Eldercare Companies



- Academic Research
- Agencies



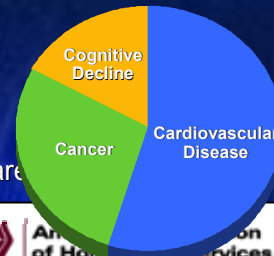
Building the Future

Collaboration

- Industry
 - Technology, Healthcare, Eldercare



- Academic Research
- Agencies & Associations



"We are thrilled to see Intel leading the high tech charge to explore opportunities for improving the lives of families who are dealing with Alzheimer's..."

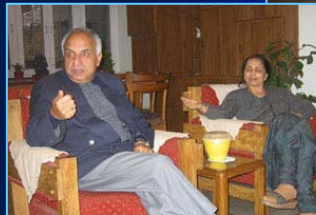
Sheldon Goldberg
President & CEO
Alzheimer's Association



Building the Future

Collaboration

Real People, Real Research



Building the Future

Collaboration

Real People, Real Research



LOCK DOOR AT
NIGHT!!!

DO NOT LET
STRANGERS
IN FOR ANY
REASON.

Dad,
Don't take
tub baths
any more. (its
hard to get out of
tub)
Take showers

Building the Future

Collaboration

Real People, Real Research

In-Home Trials



DEMO

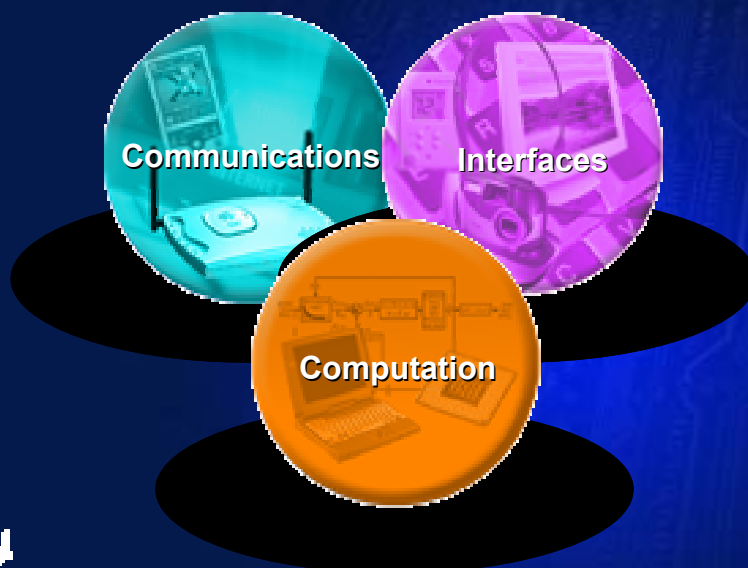
Enabling Technologies



Enabling Technologies



Enabling Technologies

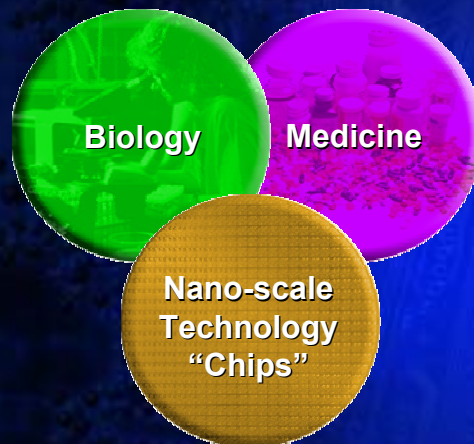


Andy Berlin, Ph.D.

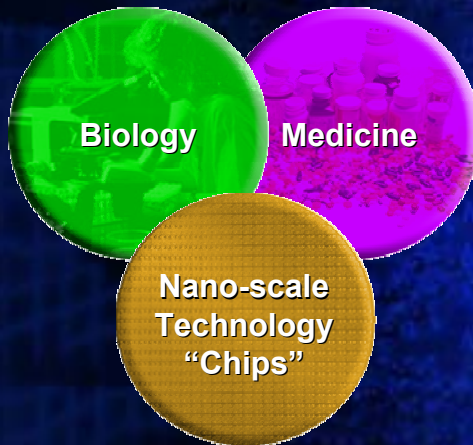
Director
Biotechnology Research
Intel Research



Converging Technologies: ***Silicon Meets Biology***

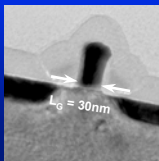


Converging Technologies: *Silicon Meets Biology*

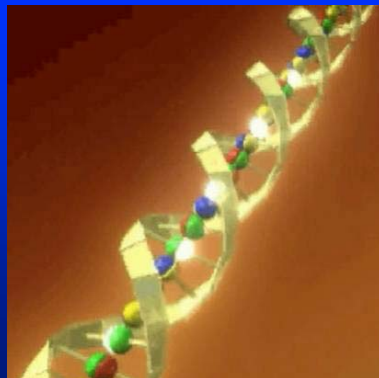


Operating At The *Nano-scale*

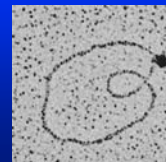
30 nm Intel Research Transistor



Human DNA

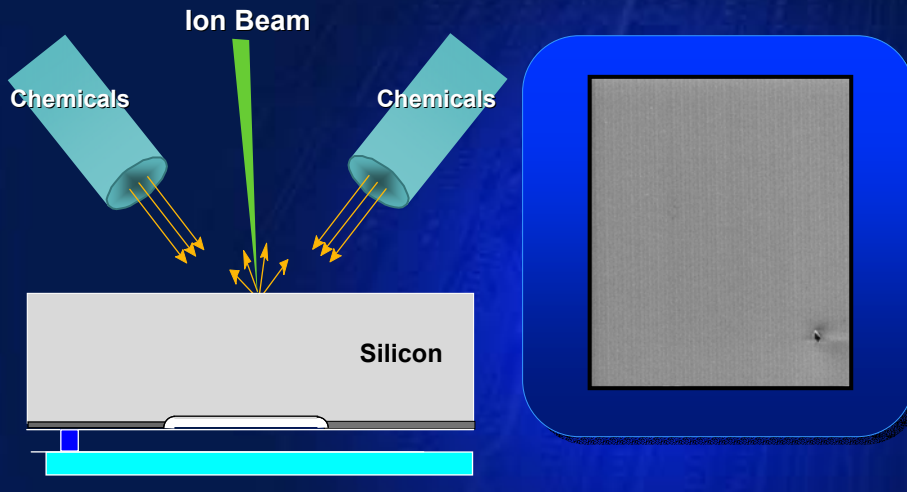


10nm Gold Particle* with DNA

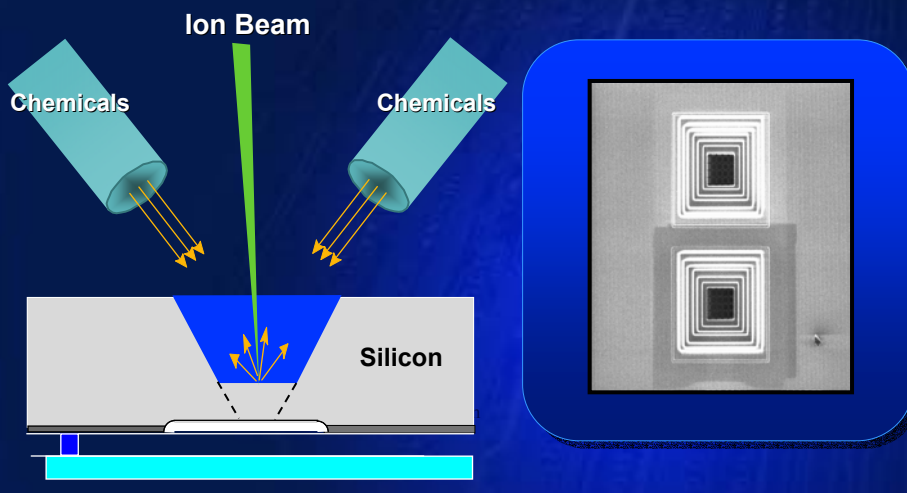


* attached to Z-DNA antibody John Jackson & Inman. Gene 1989 84 221-226.

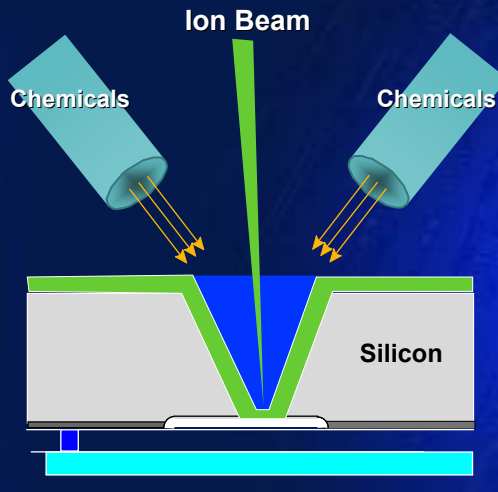
Sculpting at the *Nano-scale*



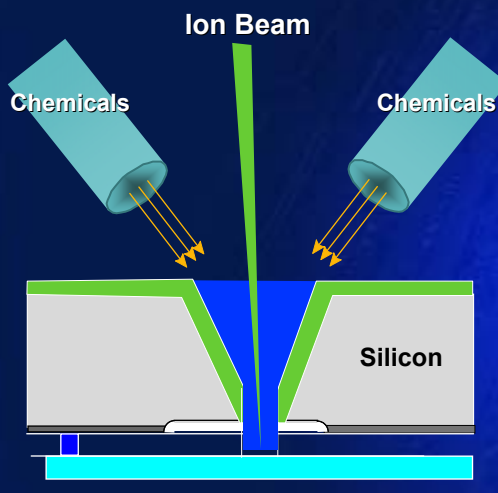
Sculpting at the *Nano-scale*



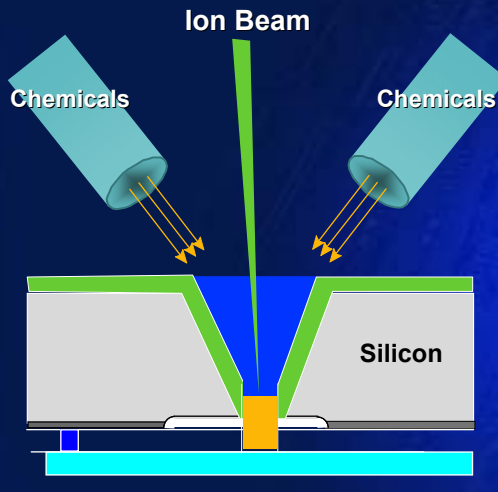
Sculpting at the *Nano-scale*



Sculpting at the *Nano-scale*

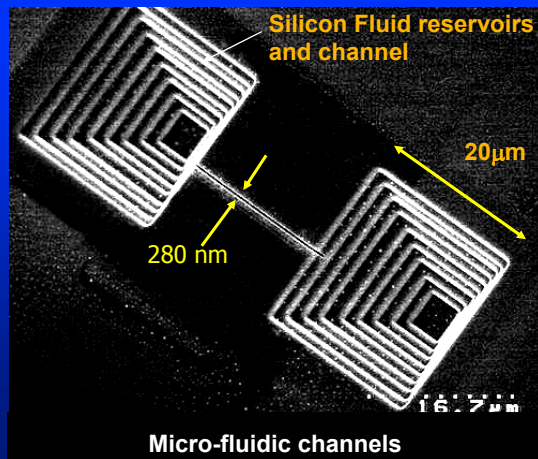


Sculpting at the *Nano-scale*

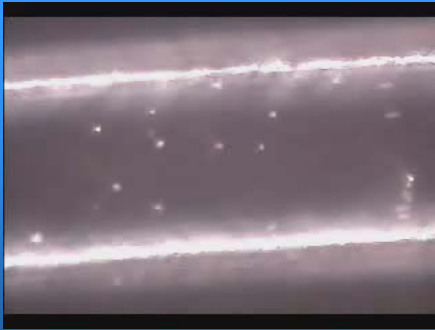


Research Results

Early Research: Micro-fluidics

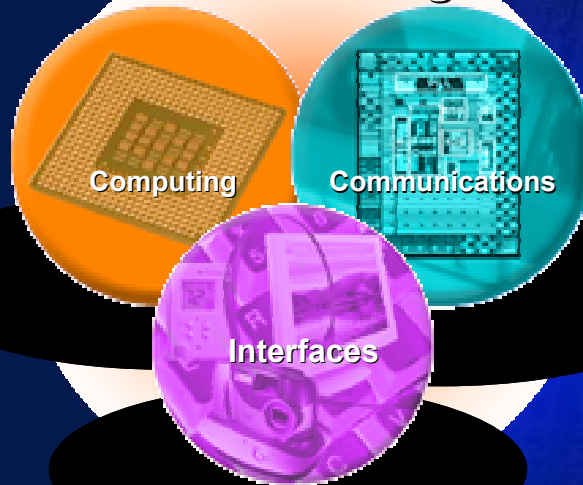


Research Results



Intel's Role:

Drive Micro Convergence



Working Together:
Realize Macro Convergence

New
Usage Models

New
Infrastructure



New ***Businesses***
and ***Biz Models***

New ***Norms/***
Behaviors



Intel
Developer
Forum

